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EXAMINER	
CRUTCHFIELD, CHRISTOPHER M	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,652	PERROT ET AL.	
	Examiner	Art Unit	
	Christopher Crutchfield	2466	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-5, 7-9 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jeon* (Jeon, Ho-In, 1394 Wireless Home Network, Korean Institute of Communication and Science, Journal of Information and Communication, Vol. 19, No. 5, Pages 63-78) in view of The ESTI IEEE 1394 SSCS (Author Unknown, Broadband Radio Access networks; HIPERLAN Type 2; Part 3: IEEE Service Specific Convergence Sublayer (SSCS)), European Telecommunications Standards Institute (ESTI) Technical Specification (TS) 101 493-3, Version 1.2.2, Pages 1-74, December 2001) and *Williams*, et al. (Steven Williams and Benno Ritter, 1394 Requirements of 802.11 QoS, IEEE 802.11 Working Group Submission, March 2001, Pages 1-17).

Regarding claim 1, *Jeon* discloses a method of transmitting data over a wireless link, the method comprising inserting the data into packets according to a format corresponding to layer 2 of a first protocol for data transmission, constructing a frame in accordance with a second protocol for data transmission over the wireless network, the second protocol being different from the first protocol, the frame comprising said packets and transmitting the constructed frame over the wireless network according to the second protocol (Pages 75-77, Particularly Figs. 10 and 11, See Also Translation Pages 29-32 and Page 34). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic by encapsulating Layer 2 IEEE 1394 SDUs within a Layer 2 802.11 MAC Layer [Fig. 10, "Wireless 1394 PAL"] [See Translation, Pages 31-32 - Disclosing that the 1394TA decided to encapsulate IEEE 1394 Subactions within 802.11 MSDUs to allow for wireless 1394 Transmission] [See Also Translation, Page 34 - Indicating that wireless 1394 uses a protocol adaptation layer sandwiched between the 802.11 MAC layer and the encapsulated 1394 packets to allow for wireless transmission and also indicating that it

is recognized that the protocol adaptation layer serves the same purpose as the convergence sublayer utilized by the European standard to allow for wireless transmission of 1394 data over Hiperlan/2].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that the method comprises a step for insertion of the data into packets according to a format corresponding to at least layer 2 of a first protocol for data transmission over a wireless network. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that the method comprises a step for insertion of the data into packets according to a format corresponding to at layer 2 of a first protocol for data transmission over a wireless network (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the layer 2 IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer/Layer 2 and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by

The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al.* (See *Williams* - The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 2, *Jeon* discloses a method wherein the data to be transmitted are formatted according to a protocol of a cabled bus (Fig. 11, "IEEE 1394" and Translation, Pages

29-34). (The system of *Jeon* discloses that the initial data packets are created by an IEEE 1394 bus [Fig. 11, "IEEE 1394" and Translation, Pages 29-34].)

Regarding claim 3, *Jeon* discloses a method according to claim 2 wherein the cabled bus is an IEEE 1394 bus, the first protocol for data transmission is IEEE 1394 and the second protocol for data transmission over the wireless network is a protocol from a family of IEEE the 802.11 protocols (Pages 75-77, Particularly Figs. 10 and 11, See Also Translation Pages 29-32 and Page 34). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic by encapsulating IEEE 1394 SDUs received via a cabled bus within an 802.11 MAC Layer [Fig. 10, "Wireless 1394 PAL"] [See Translation, Pages 31-32 - Disclosing that the 1394TA decided to encapsulate IEEE 1394 Subactions within 802.11 MSDUs to allow for wireless 1394 Transmission] [See Also Translation, Page 34 - Indicating that wireless 1394 uses a protocol adaptation layer sandwiched between the 802.11 MAC layer and the encapsulated 1394 packets to allow for wireless transmission and also indicating that it is recognized that the protocol adaptation layer serves the same purpose as the convergence sublayer utilized by the European standard to allow for wireless transmission of 1394 data over Hiperlan/2].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that a method is formed wherein the first protocol for data transmission over a wireless network is HiperLAN/2. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that a method is formed wherein the first protocol for data transmission over a wireless network is HiperLAN/2 (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by

the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al*. (See *Williams* - The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol

abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 4, *Jeon* fails to disclose a method wherein the packets are constructed into the frame by an IEEE 1394 SSCS module. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses a method wherein the packets are constructed into the frame by an IEEE 1394 SSCS module (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by

The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al*. (See *Williams* - The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 5, *Jeon* fails to disclose a method wherein the frame, is constructed from said packets according to an intermediate format defined by said layer 2 of the first protocol for data transmission over the wireless network, the constructed frame being in

accordance with the second protocol for data transmission over a wireless network, the constructed frame being distinguished from the other frames transmitted over a wireless network by a specific identifier in the constructed frame. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses a method wherein the frame, is constructed from said packets according to an intermediate format defined by said layer 2 of the first protocol for data transmission over the wireless network, the constructed frame being in accordance with the second protocol for data transmission over a wireless network, the constructed frame being distinguished from the other frames transmitted over a wireless network by a specific identifier in the constructed frame (Pages 11-14 and 23-24, Particularly Page 11, Fig. 1). (The ESTI IEEE 1394 SSCS discloses the establishment of a separate multicast MAC ID that is used exclusively for distributing IEEE 1394 streams to members of a distribution group [Pages 39-43, Particularly Figs. 13-15].)

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of MAC multicasts for distributing information concerning a particular IEEE 1394 stream to multiple devices, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the multicasting of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by assigning multicast addresses to use for the distribution of IEEE 1394 frames, as taught by The ESTI IEEE 1394 SSCS. The motive to combine is to increase efficiency by allowing a station to transmit to multiple endpoints simultaneously.

In the alternative, the specific identifier that distinguishes the constructed frame from the other frames transmitted over the wireless network can be viewed as the identifier contained in the LLC layer of *Jeon* (See Fig. 11, "LLC"). This approach is taken in dependent claim 9 (See Dependent Claim 9 for details). However, since claim 5 does not require the use of the LLC layer, this position is not yet taken.

Regarding claim 7, *Jeon* discloses a data transmission apparatus comprising means for receiving data for a first frame according to a first protocol according to a cabled bus, means for connecting to a wireless network, a module for processing the frame formatted according to the cabled bus so as to insert data received on the cabled bus into a second frame according to a format defined by the second protocol for data transmission over the wireless network, wherein the apparatus further comprises means for generating the second frame for transmission in accordance with layer 2 of the second protocol for data transmission over the wireless network, the second protocol being different from the first protocol, by inserting packets of said received data from the cabled bus, the packets of said received data being formatted according to at layer 2 the first protocol (Pages 75-77, Particularly Figs. 10 and 11, See Also Translation Pages 29-32 and Page 34). (*Jeon* discloses the use of a layer 2 protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic by encapsulating IEEE 1394 SDUs within an 802.11 MAC Layer [Fig. 10, "Wireless 1394 PAL"] [See Translation, Pages 31-32 - Disclosing that the 1394TA decided to encapsulate IEEE 1394 Subactions within 802.11 MSDUs to allow for wireless 1394 Transmission] [See Also Translation, Page 34 - Indicating that wireless 1394 uses a protocol adaptation layer sandwiched between the 802.11 MAC layer and the encapsulated 1394 packets to allow for wireless transmission and also indicating that it is recognized that the protocol adaptation layer serves the same purpose as the convergence sublayer utilized by the European standard to allow for wireless transmission of 1394 data over Hiperlan/2].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol so as to form a data transmission apparatus further comprising means for receiving a first frame according to a layer 2 of a first protocol and formatted according to a cabled bus. In the same field of endeavor, The ESTI IEEE

1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol so as to form a data transmission apparatus further comprising means for receiving a first frame according to layer 2 of first protocol and formatted according to a cabled bus (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer/layer 2, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al*. (See *Williams* - The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 8, *Jeon* discloses an apparatus wherein the cabled bus is an IEEE 1394 bus, the first protocol for data transmission over the wireless network is IEEE 1394 and the second protocol for data transmission over a wireless network is a protocol from a family of IEEE 802.11 protocols (Pages 75-77, Particularly Figs. 10 and 11, See Also Translation Pages 29-32 and Page 34). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic by encapsulating IEEE 1394 SDUs received via a cabled bus within an 802.11 MAC Layer [Fig. 10, "Wireless 1394 PAL"] [See Translation, Pages 31-32 - Disclosing that the 1394TA decided to encapsulate IEEE 1394 Subactions within 802.11 MSDUs to allow for wireless 1394 Transmission] [See Also Translation, Page 34 - Indicating that wireless 1394 uses a protocol adaptation layer sandwiched between the 802.11 MAC layer and the encapsulated 1394

packets to allow for wireless transmission and also indicating that it is recognized that the protocol adaptation layer serves the same purpose as the convergence sublayer utilized by the European standard to allow for wireless transmission of 1394 data over Hiperlan/2].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that the first protocol for data transmission over a wireless network is HiperLAN/2. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that a the first protocol for data transmission over a wireless network is HiperLAN/2 (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al*. (See *Williams* - The system of *Williams* suggests the use of a common

convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 9, *Jeon* discloses an apparatus wherein the generated frame comprises, a certain layer or layers necessary for encapsulation and transmission of packets as said frame for transmission generated with aid of said certain layer or layers of the first protocol (Pages 75-77, Particularly Figs. 10 and 11, See Also Translation Pages 29-32 and Page 34). (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic by encapsulating IEEE

1394 SDUs received via a cabled bus within an 802.11 MAC Layer [Fig. 10, "Wireless 1394 PAL"] [See Translation, Pages 31-32 - Disclosing that the 1394TA decided to encapsulate IEEE 1394 Subactions within 802.11 MSDUs to allow for wireless 1394 Transmission] [See Also Translation, Page 34 - Indicating that wireless 1394 uses a protocol adaptation layer sandwiched between the 802.11 MAC layer and the encapsulated 1394 packets to allow for wireless transmission and also indicating that it is recognized that the protocol adaptation layer serves the same purpose as the convergence sublayer utilized by the European standard to allow for wireless transmission of 1394 data over Hiperlan/2].)

Jeon fails to disclose the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that an apparatus is formed wherein the generated frame comprises, a certain layer or layers necessary for encapsulation and transmission of packets as said frame for transmission generated with aid of said certain layer or layers of the first protocol. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the protocol adaptation layer may comprise the IEEE 1394 service specific convergence sublayer of the Hiperlan/2 protocol such that an apparatus is formed wherein the generated frame comprises, a certain layer or layers necessary for encapsulation and transmission of packets as said frame for transmission generated with aid of said certain layer or layers of the first protocol (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the IEEE 1394 SSCS to convert IEEE 1394 packets to IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of

a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al.* (See *Williams* - The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2 service specific convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 service specific convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce

the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

Regarding claim 12, *Jeon* discloses a method wherein IEEE 1394 SSCS is used to encapsulate data for transmission over a 802.11 Wireless connection (*Jeon* discloses the use of a protocol adaptation layer [PAL] to create IEEE 1394 SDUs for transmission over an 802.11 network from received IEEE 1394 traffic by encapsulating Layer 2 IEEE 1394 SDUs within a Layer 2 802.11 MAC Layer [Fig. 10, "Wireless 1394 PAL"] [See Translation, Pages 31-32 - Disclosing that the 1394TA decided to encapsulate IEEE 1394 Subactions within 802.11 MSDUs to allow for wireless 1394 Transmission] [See Also Translation, Page 34 - Indicating that wireless 1394 uses a protocol adaptation layer sandwiched between the 802.11 MAC layer and the encapsulated 1394 packets to allow for wireless transmission and also indicating that it is recognized that the protocol adaptation layer serves the same purpose as the convergence sublayer utilized by the European standard to allow for wireless transmission of 1394 data over Hiperlan/2]. The IEEE 1394 SDUs are received via a wired 1394 network at a wireless bridge, which extracts and encapsulates the IEEE 1394 SDUs [See Page 30 of Translation, Last Paragraph to Page 31]. Inherent in this process is that the SDUs are received form the lower layers of the protocol stack at the bridge prior to encapsulation.)

Jeon fails to disclose the first layer is a Hyperlan/2 protocol convergence layer at alyer2 that obtains the packets as segmentation and reassembly packets. In the same field of endeavor, The ESTI IEEE 1394 SSCS discloses the first layer is a Hyperlan/2 protocol convergence layer at alyer2 that obtains the packets as segmentation and reassembly packets (Pages 11-14). (The system of The ESTI IEEE 1394 SSCS discloses the use of the layer 2 IEEE 1394 convergence layer common part and SSCS to convert IEEE 1394 packets to

IEEE1394 SSCS PDUs for encapsulation by the Hiperlan/2 Data Link Layer/Layer 2 and transmission on the wireless link [Pages 11-14 and 23-24, Particularly Page 11, Fig. 1]. In this setup, the SSCS layer receives the PDUs as segmentation and reassembly PDUs from the lower layer).

Therefore, since The ESTI IEEE 1394 SSCS suggests the use of the Hiperlan 2 service convergence layer, including the common part convergence sublayer, the segmentation and reassembly layer and the service specific convergence sublayer for adapting IEEE 1394 traffic to a form that may be encapsulated in and transmitted by the Hiperlan 2 data link layer and *Jeon* suggests the use of a protocol adaptation layer/convergence layer for adapting IEEE 1394 traffic to a format that can be encapsulated by the 802.11 data link layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the service specific convergence layer of The ESTI IEEE 1394 SSCS in to the teachings of *Jeon* by replacing the 802.11 protocol adaptation layer with the IEEE 1394 SSCS, as taught by The ESTI IEEE 1394 SSCS, and encapsulating the IEEE 1394 SSCS packets using the appropriate data link layer, as taught by The ESTI IEEE 1394 SSCS and *Jeon*. The motive to combine is to allow the use of a common conversion layer for Hiperlan 2 and IEEE 802.11 to reduce system complexity as suggested by *Williams, et al.* (See *Williams* - The system of *Williams* suggests the use of a common convergence/adaptation layer for bridging all wireless protocols [Page 4 – "There are calls to create a common approach to bridging across any wireless medium - Hiperlan/2, MMAC"]) and *Jeon* (See *Jeon* - Indicating that the Hiperlan 2 Convergence Layer and the Wireless 1394 Protocol Adaptation Layer are art recognized equivalents that perform the same task [See The Translation of *Jeon*, Page 34, First Full Paragraph]).

In the alternative, the motive to combine could also be supplied by KSR Int'l Co. v. Teleflex Inc., as *Jeon* discloses the present invention except for the use of the Hiperlan 2

convergence sublayer (as opposed to the 802.11 protocol adaptation layer of *Jeon*) for adapting IEEE 1394 packets. KSR Int'l Co. v. Teleflex Inc. 127 S.Ct. 1727, 82 USPQ2d 1385 (Supreme Court 2007) (KSR). Since the use of both the 802.11 protocol abstraction layer and the Hiperlan 2 IEEE 1394 convergence sublayer for the conversation of IEEE 1394 packets to a format suitable for encapsulation by a wireless data link layer was well known in the art at the time of the invention, a person of ordinary skill in the art at the time of the invention would have recognized the Hiperlan 2 IEEE 1394 service specific convergence sublayer could be substituted for the 802.11 protocol adaptation layer to produce the predictable result of an IEEE 802.11 wireless system that uses the Hiperlan 2 IEEE 1394 service specific convergence sublayer to adapt IEEE 1394 packets for transmission on an IEEE 802.11 wireless link. *Id,* 127 S.Ct. at 1737-39, 82 USPQ2d at 1395-97.

5. **Claims 6 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Jeon* (Jeon, Ho-In, 1394 Wireless Home Network, Korean Institute of Communication and Science, Journal of Information and Communication, Vol. 19, No. 5, Pages 63-78), The ESTI IEEE 1394 SSCS (Author Unknown, Broadband Radio Access networks; HIPERLAN Type 2; Part 3: IEEE Service Specific Convergence Sublayer (SSCS), European Telecommunications Standards Institute (ESTI) Technical Specification (TS) 101 493-3, Version 1.2.2, Pages 1-74, December 2001) and *Williams*, et al. (Steven Williams and Benno Ritter, 1394 Requirements of 802.11 QoS, IEEE 802.11 Working Group Submission, March 2001, Pages 1-17) as applied to claim 1, and further in view of *Kitchin*, et al. (US Pre Grant Publication No. 2003/0037169 A1).

Regarding claim 6, *Jeon* fails to disclose a method wherein the frame is constructed from said packets according to an intermediate format defined by said certain layer or layers of

the first protocol for data transmission over the wireless network and in accordance with the second protocol for data transmission over a wireless network, the constructed frame being distinguished from other frames through the use of specific MAC addresses identifying the origin and destination of the constructed frame. In the same field of endeavor, *Kitchin* discloses a method wherein the frame is constructed from said packets according to an intermediate format defined by said certain layer or layers of the first protocol for data transmission over the wireless network and in accordance with the second protocol for data transmission over a wireless network, the constructed frame being distinguished from other frames through the use of specific MAC addresses identifying the origin and destination of the constructed frame (Paragraphs 0015, 0022-0024 and 0028). (The system of *Kitchin* discloses a method for restricting access to particular wired communications networks [Paragraphs 0020-0024]. Specifically, *Kitchin* discloses that access to multiple wired networks may be regulated by assigning separate BSSIDs to each wired network and forcing clients that are to access multiple different wired network types to associate and authenticate with each of the BSSIDs to be accessed [Paragraphs 0020-0024 and 0028]. Therefore, *Kitchin* teaches the use of two different BSSIDs/MAC addresses, one which is created to access a general wired network, and another which is created to access a wired IEEE 1394 network.)

Therefore, since *Kitchin* suggests the use of multiple BSSIDs/MAC Addresses for distinguishing between general and IEEE 1394 traffic, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the BSSID based network separation of *Kitchin* into the teachings of *Jeon* as modified by The ESTI IEEE 1394 SSCS by using a separate BSSID and MAC address for IEEE 1394 traffic and requiring that all stations that are to access the IEEE 1394 network to authenticate and associate with the separate

BSSID. The motive to combine is to enhance security and to allow easy differentiation of packets destined for each network type.

Regarding claim 11, *Jeon* fails to disclose a method wherein the specific MAC addresses comprise first and second addresses, a first address at an IEEE 802.11 driver level and a second address created by repeating IEEE 802.11 authentication and association phases. In the same field of endeavor, *Kitchin* discloses a method wherein the specific MAC addresses comprise first and second addresses, a first address at an IEEE 802.11 drive level and a second address created by repeating IEEE 802.11 authentication and association phases (Paragraphs 0015, 0022-0024 and 0028). (The system of *Kitchin* discloses a method for restricting access to particular wired communications networks [Paragraphs 0020-0024]. Specifically, *Kitchin* discloses that access to multiple wired networks may be regulated by assigning separate BSSIDs to each wired network and forcing clients that are to access multiple different wired network types to associate and authenticate with each of the BSSIDs to be accessed [Paragraphs 0020-0024 and 0028]. Therefore, *Kitchin* teaches the use of two different BSSIDs/MAC addresses, one which is created to access a general wired network, and another which is created to access a wired IEEE 1394 network.)

Therefore, since *Kitchin* suggests the use of multiple BSSIDs/MAC Addresses for distinguishing between general and IEEE 1394 traffic, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the BSSID based network separation of *Kitchin* into the teachings of *Jeon* as modified by The ESTI IEEE 1394 SSCS by using a separate BSSID and MAC address for IEEE 1394 traffic and requiring that all stations that are to access the IEEE 1394 network to authenticate and associate with the separate BSSID. The motive to combine is to enhance security and to allow easy differentiation of packets destined for each network type.

6. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over *Jeon* (Jeon, Ho-In, 1394 Wireless Home Network, Korean Institute of Communication and Science, Journal of Information and Communication, Vol. 19, No. 5, Pages 63-78), The ESTI IEEE 1394 SSCS (Author Unknown, Broadband Radio Access networks; HIPERLAN Type 2; Part 3: IEEE Service Specific Convergence Sublayer (SSCS), European Telecommunications Standards Institute (ESTI) Technical Specification (TS) 101 493-3, Version 1.2.2, Pages 1-74, December 2001) and *Williams*, et al. (Steven Williams and Benno Ritter, 1394 Requirements of 802.11 QoS, IEEE 802.11 Working Group Submission, March 2001, Pages 1-17) as applied to claim 5, and further in view of *Perlman* (Radia Perlman, Interconnections: Bridges, Routers, Switches and Internetworking Protocols, Second Edition, 14 September 1999, Pages 1-4)

Regarding claim 10, *Jeon* discloses a method wherein the constructed frame uses a logical link control packet appended to an IEEE 802.11 frame (Figure 11, LLC).

Jeon fails to disclose the specific identifier comprises a logical link control packet (LLC) appended to an IEEE 802.11 frame, the constructed frame being distinguished from the other frames transmitted over a wireless network by a specific identifier in the constructed frame. In the same field of endeavor, *Perlman* discloses the specific identifier comprises a logical link control packet appended to an IEEE 802.11 frame, the constructed frame being distinguished from the other frames transmitted over a wireless network by a specific identifier in the constructed frame (Pages 2-4). (The system of *Perlman* discloses the use of the IEEE 802.2 LLC header to distinguish the protocol types of encapsulated traffic.).

Therefore, since *Perlman* suggests the use of the IEEE 802.2 LLC layer to identify the protocol type of encapsulated traffic, it would have been obvious to a person of ordinary skill in

the art at the time of the invention to use the LLC layer of *Perlman* to identify the encapsulated packets as IEEE 1394 packets. The motive to combine is to allow the determination of protocol type without inspection of the encapsulated data, thereby speeding up the process of identifying the protocol types of packets.

Allowable Subject Matter

7. Claim 13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art, particularly *Jeon* and The ESTI IEEE 1394 SSCS fail to disclose the use of the SAR in the SSCS to construct packet data in accordance with the long channel packet type of the Hiperlan/2 protocol for encapsulation in and transport over an 802.11 network.

Response to Arguments

9. Applicant's arguments filed 6 May 2010 have been fully considered but they are not persuasive.

With regard to claims 1 and 7, applicant's arguments that a person of ordinary skill in the art would not have been motivated to substitute the PAL of *Jeon* with the SSCS of the HIPERLAN/2 Protocol, applicants arguments have been considered and are not persuasive.

The Applicant argues that a person of ordinary skill in the art would not be motivated to perform the substitution of the SSCS of the HIPERLAN/2 Protocol for the PAL of *Jeon* because the substitution results in a more complex system (See the Second Full Paragraph of Page 11, Applicant's Argument and Remarks). The examiner disagrees, and points out that the gist of the argument concerning system complexity reduction stems from the fact that the complexity of creating a system for transporting IEEE 1394 packets over a 802.111 network is reduced by allowing the re-use of the SSCS from the Hiperlan/2 protocol, thereby obviating the need to create an entirely new PAL to perform an identical function (See for example, the cite to *Williams* - "there are calls to creating a common convergence/adaptation layer for bridging all wireless protocols..." on page 5 of the Non-Final Rejection, Dated 25 Feb 2010).

With regard to claims 1 and 7, applicant's arguments that the combination of ESTI IEEE 1394 SSCS and *Jeon* is not possible, applicant's arguments have been considered and are not persuasive.

The Applicant appears to argue that if the IEEE 1394 SSCS and *Jeon* were combined, then the output of the IEEE 1394 SSCS layer would be formatted according to the entirety of Hiperlan/2 Data Link protocol. This argument fails to take into account the combination presented. The system of *Jeon* discloses the use of a PAL to encapsulate IEEE 1394 data in an 802.11 frame. The system of The IEEE 1394 SSCS discloses a different PAL that could be used to encapsulate the data (i.e. the IEEE 1394 convergence layer). This convergence layer is presented as a separate layer and does not require the use of the rest of the HIPERLAN/2 Layer 2 protocol (in fact this is the purpose of layering protocols in the first place - to produce separate "modules" that may be interchanged and re-used in a simple manner). Therefore "double encapsulation" of the packet in both a Hiperlan/2 and a IEEE 802.11 Link layer packet is not required by the combination.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Crutchfield whose telephone number is (571) 270-3989. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Crutchfield/
Examiner, Art Unit 2466
7/15/2010

/Daniel J. Ryman/
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